

March 16, 1954

Dr. Neal B. Groman
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Dear Dr. Groman:

Thank you for your letter of March 10 which has helped to clarify my understanding of the diphtheria problem. I will be very happy to see your manuscript and make any comments that I can upon it.

I would agree, as I have before, on the distinction of this conversion from transduction on the basis of the kind of evidence you mention, namely that "every plaque forming particle" retains the converting potentiality. I would still like to see an explicit documentation in the literature on the point that of a sample of survivors of phage treatment, all of the converted types were lysogenic and equally that all of the nonconverted types were nonlysogenic. The first part of this statement seems to have been well established but the second is more obscure but nevertheless necessary.

May I comment on your interest in finding a nonconvertible strain as having some bearing on the mechanism of conversion. I do not think that the maintenance of converting activity on the part of phage grown on such a nonconvertible strain would be very decisive, as it would be quite possible for toxigenicity to be controlled by different nonhomologous genetic factors. Such a nonconvertible strain might still possess the factors required by other convertible strains. This would be analagous to the situation described by Stocker and myself in our work on transduction of motility, of which I have sent you a reprint.

Your reversion experiments are of course among the most decisive in favor of an absolute relationship between phage and toxicity. I am looking forward to your pending manuscript and may I at this time ask whether you would be willing to permit me to quote from it in connection with a review that I will be preparing during the next 30 days.

On the matter of the discovery of nonconverting phages, while these have a certain intrinsic interest, I do not agree that they are central to the problem of the mechanism of conversion. As you say, it is obvious that conversion is a phage specific phenomenon.

Yours sincerely,

Joshua Lederberg
Associate Professor of Genetics

JL:mg